

Docket No. F-7110

Ser. No. 09/923,941

REMARKS

Claims 1-15 and new claims 16-20 are now in this application. Claims 1-15 are rejected. Claim 1 is objected to. Claims 1-6, 11, 12, 14 and 15 are amended herein to clarify the invention, to broaden language as deemed appropriate and to address matters of form unrelated to substantive patentability issues.

Specification

The specification has been amended at page 2 to insert the section heading "Brief Summary of the Invention" as suggested by the Examiner to overcome the objection to the disclosure.

Claim Objections

To overcome the objection to claim 1, the preamble of claim 1 is amended to be similar to claims 14 and 15.

Claim Rejections-35 U.S.C. §103

Claims 1, 2, 9, 10 and 14 are rejected under 35 U.S.C. §103(a) as being unpatentable over the Shimizu reference (U.S. Pat. No. 5,862,229). The Examiner took a position that it would have been obvious to implement the limitation of the

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selection of which sound generator generates sound based on the comparison of the distance between the bullet and the game player to a threshold (see the Office Action at page 12).

The Examiner's rejection is respectfully traversed in view of amended independent claims 1 and 14.

Prior to discussing the rejection, a brief review of several important features and characteristics of the invention is warranted. In the invention, a "viewing point" of a virtual camera is used to control the sounds generated by sound generators. This viewing point is situated in a play area in front of and apart from a monitor of the game machine and is preferably the position of a game player's eyes (see claim 13). Also, an image, viewed from the viewing position, is generated in accordance with the viewing position of the virtual camera, which moves according to the movement of the game player. That is, as the player moves, including linearly in a right-left direction relative to the monitor, the image changes accordingly.

Another important feature, set forth in claim 1, is that a "virtual" distance between a bullet fired by an enemy character at an attacking position and the viewing point is used to determine which of a pair of sound generators will generate sounds. Depending upon the magnitude of the distance, the sound is outputted from either a first sound generating device or a second sound generating device.

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For example, if the bullet is fired at an angle that will place it far away from the game player (above the threshold), then a sound generator more distant from the game player will generate sound. On the other hand, if the bullet is fired so that it will pass close to or even impact the game player, then a sound generator more proximate the game player will generate sound.

In consideration of these features, claim 1 recites first and second sound generators arranged in different positions to produce sound output based on the enemy character and attacking position judging means arranged to determine whether a distance between a bullet fired by the enemy character displayed on the monitor at the attacking position and the viewing point of the simulated camera is less than or greater than a threshold value. A sound control unit causes a sound to be outputted from the first sound generator when the distance between the fired bullet and the viewing point is determined by the attacking position judging means to be greater than the threshold value and causes the sound to be outputted from the second sound generator when the distance is determined by the attacking position judging means to be less than the threshold value. Claim 14 includes similar features.

The processing to control the sound generator based on the comparison of the distance between the bullet and the viewing point is shown in Fig. 10 and described in the specification at pages 16-18.

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Shimizu also does not compare the distance between the objects to a threshold and determine which of the speakers will generate sounds based on the comparison. Rather, in Shimizu, the sounds from the speakers are automatically adjusted based on movement relative to the objects. For example, as the game character corresponding to the game player moves closer to a waterfall on the left side of the image, the volume of the left speaker will increase while the volume of the right speaker will decrease. There is no setting or use of a distance threshold in order to control the volume of the speakers.

Since Shimizu does not even consider establishing a threshold distance which is compared to a variable distance during the game in order to control sound generation, but rather relies on relative movement between displayed objects to control sound generation, it would not have been obvious to one of ordinary skill in the art to select which of a plurality of sound generators generates sound based on the comparison of the distance between the bullet and the game player to a threshold.

Moreover, Shimizu does not disclose a display control unit for generating a three-dimensional image including the enemy character viewed from the viewing point of the simulated camera and displaying it on the monitor as now set forth in claims 1 and 14.

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In view of the changes to claims 1 and 14 and the arguments presented above, it is respectfully submitted that the Examiner's rejection of claims 1, 2, 9, 10 and 14 as being unpatentable over Shimizu has been overcome and should be removed.

Claims 6-8, 11-13 and 15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Shimizu in view of Koji (JP 08-221187).

The Examiner's rejection is respectfully traversed in view of amended claims 6 and 15. Claims 6 and 15 are amended to clarify that the head detecting unit is arranged to detect a position of a head of a game player in the play area and along a left-right direction of the game machine. In this manner, the head detecting unit detects the position of the game player's head during linear movement of the game player.

Shimizu does not disclose detecting the position of the head of the game player in any manner whatsoever.

Koji describes a head mount device which engages the game player's head and determines the direction the game player is facing. A video control unit then scrolls the image being viewed based on the angular displacement of the game player's head.

In contrast to the claimed embodiments, Koji does not disclose detecting the position of a head of a game player in the play area along a left-right direction of the

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The features now set forth in claims 1 and 14 are not disclosed, taught or suggested by Shimizu.

Shimizu describes a sound generator synchronized with an image display such that the volumes of left sound source and right sound source (right and left speakers. L & R) are varied according to the relative position of the character with respect to the sound sources. The character in the image is controlled by the game player in front of the screen and Shimizu tries to generate an imitated sound, which could be heard by the game player in the virtual 3D game space using the left and right speakers with the volumes and the time delays being adjusted. Figs. 3 and 4 of Shimizu show variations in the sound volume from the left and right speakers.

Initially, it is emphasized that Shimizu is directed to determining the distance between two objects in a displayed three-dimensional image and adjusting the sound signal based on relative movement in the image between the displayed positions of the objects (see claim 1). That is, both objects are in the image on the monitor. By contrast, in the invention, neither object is actually in the image when the distance between them is determined, one object is the bullet being fired by the enemy character toward the game player in an attempt to strike the game player and the other is the game player himself. Thus, there is a fundamental difference between the distance determination in Shimizu which is between two objects present and shown in an image and the invention wherein neither object is shown and the distance is thus referred to as a "virtual" distance.

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game machine, i.e., the varying position of the game player's head in a linear direction. Rather, the Koji system is limited to a single linear position of the head relative to the monitor and detecting angular displacement of the head while at this singular linear location. The Koji system cannot detect the position of the game player's head in various, different positions in the linear direction because the game player's head would have to be detached from the head mount device in order to move to a different linear position.

In view of the changes to claims 6 and 15 and the arguments presented above, it is respectfully submitted that the Examiner's rejection of claims 6-8, 11-13 and 15 as being unpatentable over Shimizu in view of Koji has been overcome and should be removed.

Claims 3-5 are rejected under 35 U.S.C. §103(a) as being unpatentable over Shimizu in view of Kawamoto (U.S. Pat. No. 6,361,439) and further in view of Muehle et al. (U.S. Patent No. 5,980,254).

The Examiner's rejection is respectfully traversed in view of amended claim 1, upon which claims 3-5 depend.

Kawamoto and Muehle et al. do not disclose the features now set forth in claim 1 upon which claims 3-5 depend. Specifically, Kawamoto and Muehle et al. do not determine a "virtual" distance between a bullet fired by an enemy character in a displayed image on a monitor and a viewing point in front of and apart from the

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monitor, i.e., both objects are not on the display on the monitor, and the subsequent comparison of this distance to a threshold.

In Kawamoto, the distance is defined as a virtual dimension between the projectile firing location in the virtual game space and the sound position at the target that was hit. Both the projectile firing location and the sound position are situated in the image being displayed.

Muehle et al. also does not disclose the determination of a virtual distance and the comparison of this distance to a threshold.

Accordingly, in view of the changes to claim 1 and the arguments presented above, it is respectfully submitted that the Examiner's rejection of claims 3-5 as being unpatentable over Shimizu in view of Kawamoto and Muehle et al. has been overcome and should be removed.

New claims

Claims 16-18 are added and set forth details of the head detecting unit in accordance with the invention.

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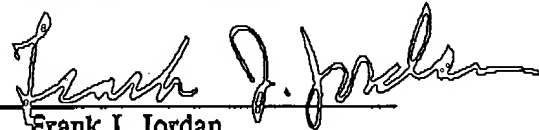
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In light of the foregoing, the application is now believed to be in proper form for allowance of all claims and notice to that effect is earnestly solicited. Please charge any deficiency or credit any overpayment to Deposit Account No. 10-1250.

Respectfully submitted,

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